

What is claimed is:

1. A rotary shuttle blow molding apparatus comprising:
 - a) a table rotatable about a vertical central axis, said table having a plurality of indexing stations including a first and second indexing stations in a
5 horizontal plane around said central axis;
 - b) a parison diehead adapted to downwardly extrude at least one parison positioned at or near said central axis;
 - c) a plurality of mold clamps carried by said table, each of said clamps being moveable along a horizontal radial pathway from an outer position to an inner
10 position beneath said diehead when said clamp is proximate the first indexing station and from said inner position to said outer position when said clamp is moved from said first indexing station to said second indexing station;
 - d) blow heads positioned above the outer positions of said clamps, each blow head including at least one blow pin;
 - 15 e) a container extractor at said first indexing station; and
 - f) a container receiver positioned to receive containers from said extractor.
2. The apparatus of claim 1, wherein said table has three indexing stations.
3. The apparatus of claim 1, wherein said parison extruder is adapted to extrude a plurality of parisons, and said blow heads each include a number of blow
20 pins equal to the number of parisons extruded by said extruder.
4. The apparatus of claim 1, wherein said parison extruder has a raised position and a lowered position.

5. The apparatus of claim 1, wherein each of said mold clamps is adapted to support a pair of mold halves having inner faces that abut along one of said radial pathways when said clamps are closed.

6. The apparatus of claim 1, wherein the at least one blow pin of each blow head has a raised position and a lowered position.

7. The apparatus of claim 1, wherein the inner positions of said clamps intersect.

8. The apparatus of claim 1, wherein said container extractor includes opposed sections positioned on opposite sides of said radial pathway.

9. The apparatus of claim 1, wherein said extractor is moveable along a radial pathway between an inner position beneath a blow pin head and an outer position, said container receiver being positioned to receive containers from said extractor when said extractor is in its outer position.

10. The apparatus of claim 1, wherein said container receiver is a conveyor.

11. A rotary shuttle blow molding apparatus for forming a plurality of blow molded, calibrated neck containers comprising:

a) a table rotatable about a vertical axis, said table including a first, second and third indexing stations positioned in a horizontal plane equidistant from each other around said axis;

b) a multi-parison extruder positioned at or near said vertical axis;

c) a plurality of mold clamps carried by said table and indexable to said stations, each of said clamps being moveable along a radial pathway from an outer

position to an inner position beneath said extruder when said clamp is proximate first indexing station and from said inner position to said outer position when said clamp is moved from proximate said first indexing station to said second indexing station;

d) blow heads positioned above the outer positions of said clamps, each
5 blow head including a plurality of calibrating blow pins equal to the number of parisons extruded by said extruder, said blow pins having raised and lowered positions;

e) a container extractor at said first indexing station; and

f) a conveyor positioned to receive containers from said extractor.

10 12. The apparatus of claim 14, said extruder having a raised position and a lowered position.

13. The apparatus of claim 11, wherein said extractor is moveable along a radial pathway between an inner container clamping position beneath a blow pin head and an outer container release position above said conveyor.

15 14. The apparatus of claim 11, wherein the inner positions of said clamps intersect.

15. A method of forming blow molded containers in a plurality of molds comprising:

a) providing a plurality of molds indexable to at least a plurality of stations
20 including at least first and second stations positioned in a horizontal plane around a vertical axis, each of said molds being radially moveable between in inner position at said axis and an outer position;

b) moving a first mold from proximate said first station to its inner position;

c) clamping a section of parison in said first mold at said inner position;

d) moving a second mold toward said first station while moving said first mold to its outer position and to said second station and expanding said parison in said first mold to form a container;

e) returning said first mold with said container to proximate said first station; and

f) extracting said container from said first mold at said first station.

10 16. The method of claim 15, further including moving said second mold to its inner position, and then moving said second mold to said second station while moving said first mold from said second station to a third station.

15 17. The method of claim 15, wherein said plurality of stations includes at least first, second and third stations, said stations being positioned equidistant from each other around said axis.

18. The method of claim 17, including the steps of moving said second mold to its outer position and to said second station and expanding said parisons in said second mold to form containers while moving a third multi-cavity mold to said first station and said first mold to said third station, and returning said first mold with said containers from said third station to said first station.

19. The method of claim 17, wherein said third mold is moved to said axis while said second mold is at said second position, and then moved with clamped

parison sections to said second position when said first mold is returned to said first position.

20. The method of claim 15, wherein said containers are blown by inserting blow pins into said parison sections, said blow pins supporting said containers until
- 5 extraction of said containers.